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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/646,228	09/14/2000	Hideyoshi Horimai	107318	5554
25944	7590	04/19/2006	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			KUMAR, SRILAKSHMI K	
			ART UNIT	PAPER NUMBER
			2629	

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/646,228

Applicant(s)

HORIMAI, HIDEYOSHI

Examiner

Srilakshmi K. Kumar

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 January 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2-44 and 46-51 is/are pending in the application.
- 4a) Of the above claim(s) 2-15, 17-25, 27-32 and 35-43 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16, 26, 33, 34, 44, and 46-51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

The following office action is in response to the amendment filed on January 17, 2006. Claims 2-44,46-51 are pending. Claims 2-15, 17-25, 27-32, 35-43 have been withdrawn from consideration. Claims 16, 26, 33, 34, 44 and 46-51 have been elected for examination. Claim 16 has been amended.

#### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 16, 26, 33, and 34, are rejected under 35 U.S.C. 103(a) as being unpatentable over Travis (US 5,132,839) in view of Sudo et al (US 6,798,390).

In reference to claim 16, the examiner is relying on Travis' second embodiment, illustrated in figure 5 for the rejection. Travis teaches a three-dimensional image display comprising, a two-dimensional image forming means (column 8, line 37, description of two dimensional display 4) formed by arranging a plurality of pixels, capable of forming a two-dimensional image by driving each of the pixels; and three-dimensional image forming means for forming a three-dimensional image in a space based on the two-dimensional image formed by the two-dimensional image forming means, wherein the two-dimensional image forming means includes image formation control means (control system 99) for controlling an image forming operation such that a two-dimensional image formed thereby changes with time.

Travis does not teach wherein the three-dimensional image forming means includes deflecting means for deflecting the projecting direction of the two-dimensional image by deflecting the parallel beams of light which have exited the two-dimensional image forming means such that the projecting direction of the two-dimensional image formed by the two-dimensional image forming means changes in accordance with time-dependent changes of the two-dimensional image. Sudo et al disclose wherein the three dimensional image forming means include deflecting means for deflecting the projecting direction of the two dimensional image by deflecting the parallel beams of light which have exited the two dimensional image forming means such that the projecting direction of the two dimensional formed by the two dimensional image forming means changes in accordance with time dependent changes of the two dimensional image in col. 8, lines 60-col. 9, line 12, col. 21, lines 6-12 and col. 22, lines 18-22). It would have been obvious to one of ordinary skill in the art to incorporate the three dimensional image forming means and deflecting means as shown by Sudo et al into that of Travis, as the feature shown by Sudo et al in col.3, lines 10-15, permits the observer to observe a three dimensional image in a natural state and without strain for the user.

In reference to claim 26, it can be seen from column 5, line 6, that Travis clearly offers holographic deflecting means as an option.

In reference to claims 33 and 34, it can be seen from figure 9a that Travis teaches a particular embodiment where the three-dimensional system and deflecting means are formed on a curved, cylindrical surface (column 11, lines 20-22). Travis does not disclose time modulation based on information on rearrangement of data of each of pixel of the plurality of two dimensional images. Hattori et al disclose in col. 3, lines 10-24.

Art Unit: 2629

3. Claims 44, 46-51 rejected under 35 U.S.C. 103(a) as being unpatentable over Travis (US 5,132,839) in view of Hattori et al (US 5,689,316).

In reference to claims 44 and 49, Travis teaches a three-dimensional image display comprising a two-dimensional image forming means for forming a plurality of two-dimensional images by scanning light (col. 3, lines 13-16). Travis does not disclose where the scanning light has been subjected to time-modulation based on information on rearrangement of data of each of pixel of the plurality of two-dimensional images. Hattori discloses where the scanning light has been subjected to time modulation based on the information on rearrangement of data of each of the pixel of the plurality of two-dimensional images in col. 3, lines 1-23. It would have been obvious to one of ordinary skill in the art to incorporate the time modulation disclosed by Hattori into the display of Travis as the time modulation of Hattori provides real time display of an image as disclosed by Hattori in col. 1, lines 34-44.

Travis discloses three-dimensional image forming means for forming a three-dimensional image by projecting the plurality of two-dimensional images formed by the two-dimensional image forming means in directions different from each other (51-59).

In reference to claim 46, Travis teaches that the two-dimensional image forming means is created by scanning light (column 3, lines 13-16).

The three-dimensional image is formed by projecting the two-dimensional images in directions different from each other (figure 5; column 8, lines 50-55).

In reference to claims 47 and 48, Travis teaches that the controller unit (item 99), coordinates the light projection direction and the synchronization data necessary for proper three-dimensional display (column 8, lines 55-63 and column 5, lines 38-45).

Art Unit: 2629

In reference to claim 50, Travis teaches wherein the three dimensional image forming means further has a region in which synchronization information for synchronized control of the display as a whole is recorded (col. 5, lines 38-45, col. 8, lines 55-63).

In reference to claim 51, limitations of claim 44, and further comprising, Travis discloses wherein the three dimensional image forming means is fixed (figs. 1-7).

### ***Response to Arguments***

4. Applicant's arguments filed January 17, 2006 have been fully considered but they are not persuasive.

With respect to claim 16, applicant argues where Sudo fails to disclose deflecting means that deflects parallel beams of light exiting a two dimensional image forming means. Sudo discloses in Fig. 46 discloses deflecting means that deflects parallel beams of light. Therefore, the prior art of Travis in combination with Sudo discloses the claimed invention of claim 16.

With respect to claim 44, applicant argues where the deficiencies of Travis are not shown and where Hattori cures the deficiencies are not disclosed. Examiner agrees. In the above rejection, Examiner discloses the deficiencies of Travis and the disclosure of Hattori used to remedy the deficiencies. As such, this office action will be made non-final.

The combination of Travis in view of Sudo discloses the limitations set forth in claims 16, 26, 33, and 34. The combination of Travis in view of Hattori discloses the limitations set forth in claims 44, 46-51.

### ***Conclusion***

Applicant is informed that AU 2675 is now known as Division 2629, and Srilakshmi K Kumar is now the examiner of record.

Art Unit: 2629

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Srilakshmi K. Kumar whose telephone number is 571 272 7769.

The examiner can normally be reached on 9:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on 571 272 3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Srilakshmi K. Kumar  
Examiner  
Art Unit 2629

SKK  
April 14, 2006

  
**SUMATI LEFKOWITZ**  
**SUPERVISORY PATENT EXAMINER**